

## Strengthening Public Health Response to Anthrax in Southern Asia

J.M. Simmerman<sup>1</sup>, S. Kumari<sup>2</sup>, R. Bhatia<sup>2</sup>, S. Dejsirilert<sup>3</sup>, L. Sangsuk<sup>3</sup>,  
P. Sawanpanyalert<sup>3</sup>, T. Fisk<sup>4</sup>, N. Tima<sup>5</sup>, S.F. Dowell<sup>1</sup>

1. U.S. Centers for Disease Control, International Emerging Infections Program (U.S. CDC-IEIP),  
2. World Health Organization, Southeast Asia Regional Office (WHO-SEARO), New Delhi,  
3. Thailand Ministry of Public Health (Thai MOPH), 4. U.S. CDC and Emory School of  
Medicine, 5. World Health Organization-Thailand

**Background:** Cutaneous anthrax is endemic in many parts of the Southern Asia, but inhalation anthrax is rare. Many countries were unprepared to identify or investigate exposures such as those experienced in the United States in October-November 2001. During this time, individuals, government offices, and corporations in southern Asia received numerous suspicious packages containing substances alleged to be anthrax spores. The International Emerging Infections Program, a newly established collaboration between the Thai MOPH and the U.S. CDC, received urgent requests for technical assistance from regional laboratories and governments. From October 16<sup>th</sup>, 2001 to February 21, 2002, the Thai NIH laboratory received and tested 216 samples of suspicious powders for the presence of *B. anthracis*. To date, no samples have returned positive for *B. anthracis*.

**Methods:** In collaboration with laboratories in the Thai MOPH and under WHO SEARO leadership, the IEIP co-sponsored a three-day anthrax training conference in Bangkok on December 6-8<sup>th</sup>, 2001. A wet-laboratory workshop and a series of interactive sessions were designed to build capacity for regional laboratories and ministries of public health to respond to acts of bioterrorism with special reference to anthrax.

**Results:** Sixty-four participants and presenters from 16 different countries participated in seminars addressing diagnosis, treatment and prophylaxis, handling suspicious packages, and coordinating an effective public health response to intentional anthrax exposure. The wet-laboratory anthrax identification course was conducted at the Thai National Institutes of Health laboratory and included spore and capsular staining, phenotypic characterization, culture methods, biochemical and ELISA testing. Polymerase chain reaction techniques for detection of genes encoding the capsule and protective antigen of *B. anthracis* were also demonstrated. Participants concluded the conference by developing an outline of a bioterrorism response plan for their respective countries.

**Results:** Sixty-four participants and presenters from 16 different countries participated in seminars addressing diagnosis, treatment and prophylaxis, handling suspicious packages, and coordinating an effective public health response to intentional anthrax exposure. The wet-laboratory anthrax identification course was conducted at the Thai National Institutes of Health laboratory for the presumptive diagnosis of anthrax based on an examination of gram stain, hemolysis on sheep blood agar, and motility. For confirmation of diagnosis, capsulated, spore-forming, susceptibility to gamma phage, and ELISA testing. Polymerase chain reaction techniques for detection of genes encoding the capsule and protective antigen of *B. anthracis* were also demonstrated. Participants concluded the conference by developing an outline of a bioterrorism response plan for their respective countries.

**Conclusion:** An effective response to bioterrorism involves close collaboration between laboratory scientists and public health decision makers. Improving local laboratory capacity to respond to bioterrorism will require increased funding and further training opportunities. In addition to providing current information on anthrax identification and management of anthrax exposures, this conference afforded participants the opportunity to establish lines of communication that should facilitate a coordinated response to possible acts of bioterrorism in the region.

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